USAWC RESEARCH PROJECT

CONVERTING TO PERFORMANCE/COMMERCIAL SPECIFICATIONS WILL REDUCE WEAPON SYSTEM COST: FACT OR FICTION?

by

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June 1996
U.S. Army War College
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REPORT DOCUMENTATION PAGE

Form Approved
OMB No. 0704-0188

1. AGENCY USE ONLY *(Leave blank)*	2. REPORT DATE	3. REPORT TYPE AND DATES COVERED
	1 June 1996	SFC Fellow Research Paper

4. TITLE AND SUBTITLE
Converting to Performance/Commercial Specifications Will Reduce Weapon System Cost: Fact or Fiction?

5. FUNDING NUMBERS

6. AUTHOR(S)
Morris, Richard D., LTC(P), USA

7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES)
U.S. Army War College
Root Hall, Bldg. 122
Carlisle Barracks
Carlisle, PA 17013-5050

8. PERFORMING ORGANIZATION REPORT NUMBER

9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)
University of Texas at Austin
Center for Professional Development and Training
4030-2 W. Braker Lane
Austin, TX 78759-5329

10. SPONSORING/MONITORING AGENCY REPORT NUMBER

11. SUPPLEMENTARY NOTES

12a. DISTRIBUTION/AVAILABILITY STATEMENT
Approved for public release: distribution is unlimited.

12b. DISTRIBUTION CODE

13. ABSTRACT *(Maximum 200 words)*

ABSTRACT

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14. SUBJECT TERMS

15. NUMBER OF PAGES
27

16. PRICE CODE

17. SECURITY CLASSIFICATION OF REPORT	18. SECURITY CLASSIFICATION OF THIS PAGE	19. SECURITY CLASSIFICATION OF ABSTRACT	20. LIMITATION OF ABSTRACT
Unclassified	Unclassified	Unclassified	Unlimited

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AUTHOR: Richard D. Morris, LTC, USA

TITLE: Converting to Performance/Commercial Specifications Will Reduce Weapons System Costs: Fact or Fiction?

FORMAT: Strategy Research Project

DATE: 1 June 1996 PAGES: 27 CLASSIFICATION: Unclassified

Drastic funding reductions are being made throughout the U.S. Department of Defense (DoD). The weapon system acquisition sector is attempting to reduce the negative impact of funding cuts through adoption of acquisition reform initiatives to reduce costs and maximize efficiency. One of the major reform initiatives eliminates most military specifications and substitutes performance specifications and best commercial practices. This paper examines these changes and whether weapon system acquisition cost will be reduced, resulting in increased "bang for the buck" in the DoD's weapon systems modernization programs.

PREFACE

In the early 1980s during the Reagan administration the United States (U.S.) Military launched a major campaign to modernize its forces. The major component of this modernization program was the development and acquisition of many new weapon systems and supporting hardware designed to give the U.S. Military a technological advantage over any adversary that might be encountered worldwide. At that time the Soviet threat was real and the Cold War was at its peak. There was little hesitation on the part of the Congress to appropriate significant levels of funding to the services to assure the modernization effort was a success and the United States remained the preeminent military power on the globe. The result was great success in weapon system modernization, validated by events such as the successful end to the Cold War and the impressive military power demonstrated during Operation Desert Storm. As the U.S. Military moved into the 1990s, it would find a new set of challenges awaiting that in many ways was more difficult to overcome than those encountered during previous periods.

One of the major new challenges of the '90s would be maintaining the highly motivated, well-trained and technologically superior fighting force built during the '80s in the face of funding reductions that in real terms plunged to levels lower than any period since the time prior to World War I. In the area of weapons modernization the impact of reduced funding would be direct and dramatic. As the weapon systems acquisition process began to receive increased scrutiny, the idea of acquisition reform initiatives to obtain cost reduction, among other objectives, was reborn, with a level of emphasis that had not been seen during earlier reform initiatives.

My research effort will examine one aspect of acquisition reform, that being the impact on weapon system costs. Cost reduction is clearly one of the major objectives of acquisition reform, as publicly stated on many occasions by Dr. William Perry, Secretary of Defense. My analysis of pertinent information will attempt to determine if the goal of cost reduction is realistic and, if so, how specifically the savings can be obtained and quantified. The scope of my research will include an examination of published materials on the subject, and more significantly, interviews with government and industry experts in the defense acquisition arena to gain their views on the subject. Specific weapon system programs which are now being executed under acquisition reform guidelines will also be examined to see if costs are coming down.

INTRODUCTION

Since World War II the technology and manufacturing sections of the United States economy have been discretely separated into two sectors—defense and non-defense. The rationale for this separation was that military products, with few exceptions, had many special and unique requirements that were not common to those used in commercial applications. The defense sector has long been considered the technological leader over the commercial side, although that body of thought has now begun to change with recent advances in commercial technology. It is now felt by many experts that military technology is no longer different from commercial technology and that continuing to segregate the two sectors could damage our capability to field state-of-the-art weapon systems.[1]

In 1989 the Defense Science Board stated that many defense unique electronic products were functionally equivalent and environmentally identical to products built with "ruggedized" commercial components to commercial specifications. The only difference was that the unique defense products cost 8 to 15 times more and were less reliable.[2] In 1990 the Semiconductor Industry Association testified to Congress that NINTENDO games contained more sophisticated technology than many of the latest generation military systems.[3] In 1992, at the request of the Acquisition Law Advisory Panel, a survey was

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[1] Sutton, Jeanne C., Col., USAF, "Marrying Commercial and Military Technologies: A New Strategy for Maintaining Technological Supremacy," *Acquisition Quarterly Review*, Summer 1994: 223-224.

[2] Ibid.

[3] Ibid.

conducted among 12 defense companies who were also members of the American Defense Preparedness Association (ADPA). The objective was to define the "cost premium or penalty" for doing business with the Department of Defense (DOD) caused by the requirement to adhere to some 840 acquisition laws, the corresponding 1500 FAR/DFAR clauses, and approximately 30,000 military specifications and standards. Findings were that most products increased from 30% to 50% in cost due to the "DOD cost premium," with some increasing as much as 100%.[4]

Examples such as these and many others led to sweeping reforms, which were announced by Secretary of Defense William Perry on June 29, 1994. One of the major changes resulting from Secretary Perry's June 29th memo was that the DOD would eliminate most military specifications and standards and that weapon systems would now be procured under performance specifications. This meant that contractors would now be allowed to use the best commercial practices and parts and that the government would no longer provide contractors with precise "how to" instructions on building the product, but instead would tell them what it wanted in the way of performance, leaving the contractor with the task of developing the detailed approach of building the products. The impact on weapon system cost resulting from the change from military specifications to performance specifications and best commercial practices is the topic I will examine in detail with my research effort. The senior leadership in DOD and its supporting contractors expect significant cost reductions and improved efficiency

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[4] Krikorian, George K., P.E., "DOD's "Cost Premium" 30 to 50 Percent," National Defense Sept. 1992: 12-13.

with these changes. I will attempt to determine if these expectations are realistic and if they are based on fact or fiction.

Quantifying Savings—Long Term Vs Short Term

One of the government's first initiatives in the acquisition reform process was an attempt to calculate the savings for reinvestment in other areas. This task was not a straightforward one, as there was a combination of new systems and older, more mature ones. The savings percentage is likely to be much greater on a new system than on an older one where fewer opportunities exist to design in the latest cost saving efficiencies. The only way to know for sure what savings are being obtained would be to execute a program under the old and new guidelines and then compare the difference. Since this is not practical, most of the savings will be based on estimates of projected savings, which will then be verified as programs are executed and actual history is obtained. As savings are projected, Dr. Paul Kaminski, Under Secretary of Defense (Acquisition & Technology), has stated that he intends for program managers to base their acquisition planning and program baselines on savings projections being met.[5] Several current programs are now structured in this manner and will be examined in a later section of this paper.

Another major factor in evaluating savings is to look at the time frames required to achieve the desired results. While everyone would prefer immediate savings with quick reimbursement to the government by defense contractors, this is not realistic, given the scope of change that must occur. The current methods

[5] Kaminski, Paul G., "Kaminski Speaks Out On Acquisition Issues... And How To Quantify Acquisition Reform Savings," *Defense Week Magazine* Interview, Feb. 5, 1996.

of doing business were developed over many years and in most cases would require major cultural changes before the transition is complete. Also, the savings are not likely to be measured in terms of cash refunds, but rather in terms of improved long term efficiency and a fighting force that remains well equipped even as funding levels decline. Dr. Perry has stated that he expects cost savings to increase over time as the changes are implemented with the goal being billions of dollars in savings per year by the time the transition is complete.[6] As we search for savings, especially in the short term, it should be noted that costs may even increase initially to allow for the investments required to convert from the old to the new ways of doing business. We must not lose sight of the long term objectives by insisting on unrealistic short term gains as a justification for continued acquisition reform.

Coopers & Lybrand / TASC Study

In 1994 Dr. Perry, as the Deputy Secretary of Defense, requested that Coopers & Lybrand and The Analytical Sciences Corporation (TASC) conduct a study on the costs of defense contractors complying with DOD regulatory requirements. The objectives of the study were to:

(1) Develop a systematic, empirical approach to assessing the industry cost impact of the DOD regulatory environment,

(2) Measure the total DOD cost premium associated with the DOD regulatory environment, and

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[6] Perry, William, "DOD Perry Orders to Shift From Milspecs to Commercial Standards Where Possible," *Federal ContractsReport*, July 4, 1994.

(3) Identify specific DOD regulatory cost drivers.

With their investigation complete the study team concluded that the DOD regulatory cost premium is significant.[7] They found that military specification reform alone could save 20% annually in procurement cost.[8] The study identified ten key cost drivers in the "compliance equation," the top two being MIL-Q-9858A and the Truth In Negotiations Act. The study findings also stated that reductions in compliance cost could be achieved over several years, which supports the importance of a long term approach to acquisition reform and the development of new hardware using performance specifications.

Cost As An Independent Variable (CAIV)

A further indicator that cost reduction is a top priority of the acquisition reform effort is the CAIV strategy being instituted at the direction of Dr. Kaminski in his December 4, 1995 memorandum on the subject to each of the services. This policy will do away with "marginal performance improvements that have little to do with actual combat effectiveness but can drive up cost," according to Dr. Kaminski.[9] The CAIV strategy is a logical follow-up to the preceding acquisition reforms such as the change to performance specifications. It says cost will now be managed on an equal plane with performance and this approach will allow the contractor/government acquisition team to maximize the amount of

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[7] Drawn from the text of a briefing titled "The DOD Regulatory Cost Premium: A Quantitative Assessment," prepared For Dr. William J. Perry, Secretary of Defense, Dec. 1994 by Coopers and Lybrand and The Analytical Sciences Corp. (TASC).

[8] Staff Writer, "The Urge To Purge: Standards Reform Approaches a Milestone," *Defense Week*, Oct. 30, 1995, Section: No. 43, Vol. 16.

[9] Greczyn, Mary, "New Acquisition Reform Policy to Tighten Cost Restraints," *Defense Week*, Jan. 2, 1996, Section: No.1, Vol. 17.

potential savings available using the newly approved acquisition reform tools such as performance specifications and best commercial practices instituted in 1994 by Secretary Perry.

GOVERNMENT AND INDUSTRY VIEWS ON COST REDUCTION

Interview Methodology

Interviews with eleven government and industry acquisition managers provided the primary basis for this study. The participants of the interviews were selected based on their extensive and varied involvement in the weapon systems acquisition business, some of whom served in both government and contractor capacities. Each interviewee was provided, in advance, a copy of ten questions to be used in the interview (a copy of the questions is included in Appendix One). The questions were reviewed for content, quality, and clarity by two experts prior to the interviews. Two of the interviews were by telephone, the others were in person. Those interviewed were:

Mr. George Williams, SES—Currently the Program Executive Officer For Tactical Missiles, U. S. Army, Huntsville, AL.

MG Lynn Stevens, USA (Ret.)—Currently the Vice President, Manager and BAT Program Manager, Northrop Corporation, Los Angeles, CA.

BG Willie Nance, USA—Currently the Deputy Commanding General U. S. Army Space & Strategic Defense Command, Huntsville, AL.

Mr. Douglas Necessary—Currently a professional staff member for the Committee On National Security, U. S. House of Representatives.

Dr. Hans Mark—Former Secretary of the Air Force and currently on faculty at the University of Texas Austin.

Dr. Walter LaBerge—Former Under Secretary of the Army and currently Associate Director for the Institute For Advanced Technology, University of Texas Austin.

Col. Byron Powers, USA (Ret.)—Former Army Project Manager and later Director, Program and Systems Integration for The Analytical Sciences Corporation in Huntsville, AL.

Mr. Tom Goslin—Currently the program manager for the Javelin Missile System at the Lockheed Martin Corporation, Orlando, FL.

Mr. Jesse Wilson—Currently the Vice President of Missile Systems at the Texas Instruments Corporation, Dallas, TX.

Mr. Chuck McKinley—Currently the Vice President of Fire Support Programs for the Loral Corporation, Grand Prairie, TX.

Dr. George Kozmetsky —Founder of the Teledyne Corporation and former Dean of the Graduate Business School, UT Austin and currently serving on the Advisory Board for the IC2 Institute in Austin, TX.

This group of individuals brought a vast amount of knowledge and experience to my research effort. They are all dedicated to improving the acquisition process

and reducing cost while at the same time insuring the U. S. military maintains a technological advantage over its current and future adversaries.

ANALYSIS OF INTERVIEW COMMENTS

These interviews were designed to elicit candid views of experienced government and industry leaders on a non-attribution basis. Their comments are summarized with emphasis placed on frequently cited issues relating to the research topic of cost reduction and its chance for success using performance specifications and best commercial practices.

Are Acquisition Reform Changes Smart?

The first interview question dealt with support for the transition to performance specifications and the use of commercial practices and commercially specified parts in weapon systems, given the often unique characteristics of military requirements. The comments were nearly unanimous in support of changing to performance specifications and moving toward integrating the military and commercial sectors into one. The feeling was that the commercial sector has in fact advanced significantly during recent years and that commercial technology now exceeds military technology in many cases. It was also noted in several responses that the only way to remain at the current state-of-the-art is to use commercial technology and practices due to the current pace of obsolescence in new technology.

Another key point that was made repeatedly was that to reduce cost, the DOD must reduce the cycle times in all phases of weapon system development, procurement, and deployment. The logical way to do this is through adoption of commercial practices, which have historically demonstrated much shorter cycle times than those in the DOD acquisition process. An inherent benefit of reduced cycle time is reduced cost. The elimination of military specifications was also cautioned against, since some military requirements such as warheads, rocket motor propellants, and some safety related items are unique. In the zeal to make reforms we should not eliminate necessary military specifications, just plan to use them on an exception basis rather than as the rule.

How Much Can Be Saved?

The second interview question dealt with the level of savings that can be obtained from the transition to performance specifications. The feedback was nearly unanimous that a minimum of 10% could be saved; however, most felt that long term savings could be much greater as the transition matures and penetrates the entire acquisition process to include the total vendor base, as demonstrated in a 1987 Office of Technology Assessment report that showed differences in costs for equivalent military and commercial items actually purchased in the marketplace ranged from 500% to 900%.[10] The key to long term gain is to maximize benefits by moving to a single and flexible commercial production base. This approach will take advantage of all efficiencies and competitive advantages currently practiced in the commercial sector.

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[10] LaBerge, Walter B. Dr., "Why DOD Should Move Toward Commercial Practices," *Program Manager Magazine*, May-June 1994: 26.

Specific Sources Of Savings

The third interview question dealt with specific sources of savings using performance specifications. There was general agreement that savings would be realized by reducing government oversight, reducing engineering change proposal cycle time costs, streamlining contract pricing and negotiations, increasing use of simulations, increasing dependence on contractor logistic support, reducing contract data requirements, and reducing overhead costs. These administrative type savings account for the 10% minimum savings figure that most felt could be achieved. Other more important areas mentioned that could propel the savings percentages upward were efficiencies gained through use of integrated product teams, the procurement of cheaper commercial parts which are produced in large quantities to support commercial demand, and the elimination of the government and contractor infrastructure that is no longer needed in a commercial environment.

The Scope Of Savings Opportunities

The fourth interview question dealt with the potential for cost savings based on a system's maturity. The general consensus was that the greatest opportunity for savings would be on a system that is new or in the initial phase of Research & Development (R&D). This phase of development provides the maximum opportunity to design measures that will have a long term impact on cost reduction. It was also felt that there were many opportunities to save money on existing systems to include those already fielded. With funding levels dropping, this area is critical, as very few new systems are expected in the near

term. A significant piece of weapon system modernization programs is likely to be accomplished through preplanned product improvement (P3I) programs on the current mature systems. These P3I programs must be developed using performance specifications that incorporate commercial cost savings available with newer systems. Examples are releasing control of technical data packages to the contractors, increasing use of contractor logistic support at the depot level, and looking for more innovative ways to monitor shelf life and long term reliability.

The Role Of Warranties

The fifth interview question dealt with how warranties will fit into the overall cost reduction equation and how important they are in the performance specification environment. The responses clearly indicate that from the government perspective, warranties are perceived to play an increasing role, providing an increased measure of security, as the government will no longer maintain control over the detail building of the hardware.

It was also apparent from the government responses that warranty cost is expected to remain low and will not be a major issue because of the improved hardware now available from the commercial sector. From the contractor perspective the responses were much different. They agreed that warranties will be important, but it was evident that little thought had gone into the details of how warranties will be structured and priced to avoid contractors assuming an unacceptable level of risk. Some of the prevailing thoughts from the contractor perspective were that warranties should be priced as a separate line item; they

may be low or no cost initially, but must have a cost premium added in the out years, and there must be a liability cap at some point in the system life.

It was also conceded by the contractor and government perspective that ten year warranties will probably be the norm on items such as small missiles that are placed in long term storage with little or no scheduled maintenance, usually referred to as "wooden rounds." Today these systems normally have a requirement of at least a ten year shelf life. As commercially produced weapon systems are developed and monitored, actual history will aid in the fine tuning of warranties and hopefully reduce their cost.

The Reliability & Shelf Life Question

The sixth interview question dealt with the risk to reliability and shelf life associated with the elimination of military specifications. Some government acquisition managers had doubts about the capabilities of commercial parts to meet the performance levels demonstrated over the years by military specification parts. The responses did not reflect high levels of concern from the government or contractor perspectives. This is primarily due to major advances in commercial electronics and substantial testing that has been done to verify the performance of plastic encapsulated microcircuits and other commercial electronic assemblies. Suggestions for increased comfort levels on reliability and shelf life were to look at the U.S. nuclear weapons program procedures and to capitalize on advances in technology by designing new methods of self testing that could be monitored with minimal cost and effort.

Government Support Of Acquisition Changes

The seventh interview question dealt with how well the government acquisition hierarchy is supporting the myriad of changes that were initiated with the Federal Acquisition Streamlining Act of 1994 now that the act is two years old. Responses were fairly consistent that pockets of resistance to change still exist in the government. However, even though some resistance continues, the magnitude of change undertaken has gained enough momentum that it will not be easily reversed. It was also noted that some government resistance should be expected, given that new ways of doing business will directly impact personnel and training. Both government and contractor employees will be facing possible job elimination or at a minimum significant levels of retraining. It's also projected that many less people will be required given the reduction in oversight and management functions that will be required using performance specifications and commercial practices. This long term reduction in personnel will be a major contributor to cost reduction of future weapon systems.

Examples Of Program Cost Savings

The eighth question was directed primarily to the contractors being interviewed. Several examples of programs that are being executed under performance specifications were provided and will be examined in a later section of this paper. Respondents cautioned that the acquisition community should not be too quick to try and measure program successes. Relatively speaking, we are only two years into the reform methods of doing business. To truly evaluate the cost and other aspects of these changes will likely take a minimum of 5 years and possibly many more. This is partially true because of the time it will take to

dismantle the costly and complex infrastructure that has been put in place under the old regulatory guidelines.

Sustaining Acquisition Reform

The ninth interview question dealt with DOD's role in continuing the reform measures that were set in motion by the Federal Acquisition Streamlining Act (FASTA) in 1994. Respondents expressed satisfaction with DOD's support to date in executing the latest FASTA driven acquisition reforms. Those surveyed urged continued top-down support from Secretary Perry and the service chiefs. They also suggested that unnecessary personnel and oversight functions be eliminated as soon as possible, since they will only hamper the acquisition reform process if the structure remains in place. One interviewee even went so far as to say "It may take the turnover a whole generation of government acquisition people to complete the acquisition reform process."

Additional Areas Of Significance

The tenth interview question was an open one where respondents were asked to express their thoughts on other important areas related to cost savings and performance specifications. The major theme that was mentioned here was that although the change from military specifications & standards to performance specifications will reduce cost, it is only a small part of the total acquisition reform cost savings equation. What really must occur is a complete change in the culture of the acquisition community, especially on the government side. The past adversarial relationships will have to be transformed into ones of trust. Teamwork between contractors and government must be developed through

such vehicles as integrated product teams, which are now being incorporated into some weapon system programs. This approach allows for shared responsibility and multifunctional involvement early in a program's life cycle. Cost saving measures can more easily be designed into hardware up front where this was difficult in the military specification and military standard environment.

Another tool that must be efficiently used with performance specifications is that of incentives. With the elimination of military specifications the government must look for new ways to influence contractor behavior. The use of incentives such as fee structure can be used for placing emphasis in critical areas. An example of this would be the withholding of a portion of the fee until certain reliability or shelf life goals are met. A precedent for this type of incentive has been set in the U.S. satellite programs, where some funds are withheld from payment until certain specified performance criteria have been met in space by the satellite. In the past most incentives in military contracts have been focused almost solely on hardware performance. In the commercial world this approach should be revisited with emphasis placed on other areas such as cost control.

A final area that was deemed important by the respondents was that of flexible manufacturing lines which will now be possible using performance specifications and commercial practices. This concept will provide optimum efficiency by allowing military and commercial hardware to be produced on a single manufacturing line, eliminating the unnecessary duplication and accounting nightmares of the past.

PROGRAM SUCCESSES TO DATE

Relatively speaking, it is still early in the acquisition reform process to expect major success stories of cost savings; however, there are several program examples where promising indications of what might be expected in the future are already visible. Some of these examples will be examined to illustrate early successes and acquisition trends for the future.

The DOD / Raytheon Common Requirements Initiative

The DOD / Raytheon Common Requirements Initiative was a pilot program to move toward the flexible manufacturing concept of a common manufacturing line supporting numerous customers and hardware requirements. Raytheon was building hardware for the Army, Navy, and Air Force and satisfying different requirements by performing a unique process to accommodate unique requirements or by applying the most stringent processes to all requirements. This resulted in inefficiencies being spread across the total customer base, which caused extended schedules and higher costs.[11] Teams were formed consisting of Raytheon employees and government representatives from the Defense Plant Representative Office (DPRO). Thirty-two areas for change were identified that would lead to a more standardized manufacturing approach. The potential benefits for the services were near term savings with no reduction in quality or

[11] Williams, George; Steelman, James; Voelker, Edward, "The DOD / Raytheon Common Requirements Initiative," *Army RD&A Magazine*, March-April 1996: 45-47.

performance—Raytheon would benefit from greater efficiency and a more competitive posture while protecting its business base.[12]

Implementation of this effort began in January 1996. Savings are currently estimated at $7.7 million for instant contracts and a potential of $28 million annually in future contracts.[13] Initiatives such as the Raytheon one are the first steps toward single process manufacturing lines that will produce both military and commercial products simultaneously. Projects similar to the Raytheon one are being planned for approximately thirty of the Army's top defense contractors.[14]

Joint Direct Attack Munition (JDAM)

JDAM is a tailfin kit that is applied to 500, 1000, and 2000 pound bombs. It converts a dumb bomb into a guided bomb using a global positioning satellite receiver for navigation. The system will be purchased by the Air Force and Navy beginning in 1997. JDAM is one of the premier systems approved to use off-the-shelf commercial parts and performance specifications to reduce cost. Cost is managed as an independent variable and program acceleration is allowed, all of which result in a major unit cost reduction. The government's original unit cost estimate was around $40,000. It is now expected to come in around $18,000

[12] Ibid.

[13] Ibid.

[14] Ibid.

per copy. The total program is expected to be reduced from $4 billion to $2.5 billion.[15]

F-16 Fighter Proposal

The Lockheed Martin Corporation has submitted a proposal to the Air Force to convert its F-16 fighter production line from military to commercial practices. The company proposes thirteen specific changes from military to commercial standards involving legal requirements, cost accounting standards, and oversight reductions. These changes are expected to reduce the $20 million F-16 unit cost by 15%. Lockheed has guaranteed the savings in a contract if the government accepts its proposal.[16]

Contractor Logistics Support (CLS) For The C-21

In late 1994 the Air Force signed a fixed price contract for CLS on the C-21 aircraft, a military version of the Learjet 35. It is estimated that this contract will save the government $100 million over its ten year life.[17] These savings will occur because of new acquisition practices which include stretching the contract from five to ten years to allow for maximum competition and program stability and to allow for the use of commercial standards and practices employed by the civil aircraft support industry. The Air Force has determined that many practices

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[15] Oliveri, Frank, "McDonnell Seeks to Parlay JDAM Win Into Foreign Sales," *Defense News*, Oct. 16-22, 1995: 86.

[16] Erlich, Jeff; Hitchens, Theresa, "U.S. Mulls Commercial Practices for F-16 Fighter Line," *Defense News*, April, 10-16, 1995: 16.

[17] Chapman, Suzann, "Team Shoots to Save $100 Million," *Air Force Magazine*, Feb. 1995: 21.

followed by commercial fleet operators will work fine in the military environment and will reduce cost.

AN/ALE-47 Memory Expansion Program

A big share of the savings from performance specifications will be realized in the electronics sub-assemblies which are becoming more and more prevalent in today's weapon systems. The AN/ALE-47 Countermeasures Dispensing System produced by the Tracor Corporation is a micro-processor controlled self-protection device used to decoy electronically guided threats away from aircraft. Elimination of military specifications will allow the use of commercial parts which are functionally sound and much cheaper. A specific example in the AN/ALE-47 program is a major circuit card assembly which would cost $6,065 per unit with military specification parts and only $1,756 with the commercial equivalent parts. Subsystem savings such as this, when spread over many different types of weapon systems that are procured in large quantities, can potentially result in substantial savings in the billions of dollars.[18] These savings could be even larger when considering the reduced depot and logistic support cost associated with maintaining "commercial" equipment (i.e. throw away vs. troubleshoot, repair, component provisioning, etc.).

[18] Drawn from the text of a briefing package titled "Commercialization" provided to the author in Jan. 1996 by TRACOR Corporation.

CONCLUSION

The purpose of this research effort was to look at the effect on weapon system cost of converting from military specifications and standards to performance specifications. My analysis of the information gathered both from published sources and interviews indicates that weapon system costs will be reduced by at least 10% in the near term and much more in the long term by using performance specifications which allow for the best commercial practices and parts. Quantification of the exact savings percentages for the total DOD modernization effort will prove difficult due to the variations in program composition, ownership, and maturity. Exact percentages are probably not important if savings trends can be projected and demonstrated using logical comparisons of old versus new approaches to system acquisition.

My research also led me to a revealing aspect of the conversion to performance specifications, that being performance specifications are only one small piece of the cost reduction equation. Performance specifications is just one of many tools approved under FASTA designed to trigger a necessary major cultural change in the weapon systems acquisition community. This cultural change, when complete, will result in a much different and improved way of doing business that has already shown great success in the commercial sector and is beginning to do the same in military applications. It will provide the U.S. military with a great opportunity to reduce the historically increasing annual cost growth of weapon systems while continuing an adequate level of modernization, despite reduced funding levels. This will happen through reduced personnel and oversight costs, flexible manufacturing lines that maximize efficiency, and a

government contractor team approach to acquisition that reduces cycle times and takes advantage of the latest in military and commercial technology. A more balanced and integrated approach to cost control and system performance can insure each of these areas is maximized from Day One.

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APPENDIX ONE

INTERVIEW QUESTIONS FOR SSC RESEARCH PROJECT

Subject: Acquisition Reform Reduces Weapon Systems Cost by Converting to Performance/Commercial Specifications: Fact or Fiction?

1. Do you support the government initiative to eliminate the use of most military specifications and transition to performance specifications and commercial parts applications in weapon systems?

2. Expectations of 10% to 30% cost savings have been advertised through the elimination of military specifications. What is your estimate of real savings that will result?

3. Where specifically will the major savings be obtained? (system qualification, testing, parts cost, overhead, contract negotiations)

4. Will the transition from milspecs produce cost savings on mature systems or only ones in the early stages of R&D?

5. Will warranties figure into the cost savings calculation and will warranties be more or less important with commercial specifications?

6. Is reliability and shelf life at risk with the change to commercial specs?

7. Is the government implementing the switch to commercial specs or tying the hands of contractors in implementing these changes?

8. Are there specific programs in your company where cost savings have been demonstrated with the change to commercial specs?

9. What advice would you provide to the DOD leadership to ensure acquisition reform continues?

10. Do you have any final thoughts on areas we haven't discussed that relate to this subject?